

1. Financial and Operating Developments in 2004

The Financial Reporting System (FRS) companies¹ reached record levels in 2004 in several areas of the FRS survey, including net income, return on stockholders' equity, and cash flow from operations.² Capital expenditures increased but did not keep pace with the higher cash flow. The FRS companies used increased cash flow to substantially increase funds to repurchase shares, reduce debt, and, for most companies, raise dividends. Reserve additions for oil were sharply lower, to a large extent because of low end-of-year heavy oil prices. As a result, FRS companies only replaced 12 percent of oil production. Natural gas reserve replacement, on the other hand, reached a record high. Finding and production costs continued to rise, with finding costs affected by the negative reserve revisions for oil.

Net Income and Profitability

Net income for the FRS companies increased 41 percent in 2004 to \$81.1 billion dollars (**Table 1**), the highest amount (in constant dollars) in the history of the FRS survey (**Figure 1**).³ Operating revenues and operating expenses also reached the highest levels ever recorded by the survey. Operating revenues jumped 28 percent on sharp increases in crude oil, natural gas, and petroleum product prices (see the market summary section in Chapter 2). Operating expenses rose by 26 percent as higher prices stimulated activity in exploration and development and pushed up refinery operating expenses. The larger increase in revenues resulted in a 50-percent jump in operating income to \$122 billion in 2004. Excluding unusual items,⁴ net income rose 44 percent to \$82.8 billion.

Table 1. Consolidated Income Statement for FRS Companies and the S&P Industrials, 2003-2004
(Billion Dollars)

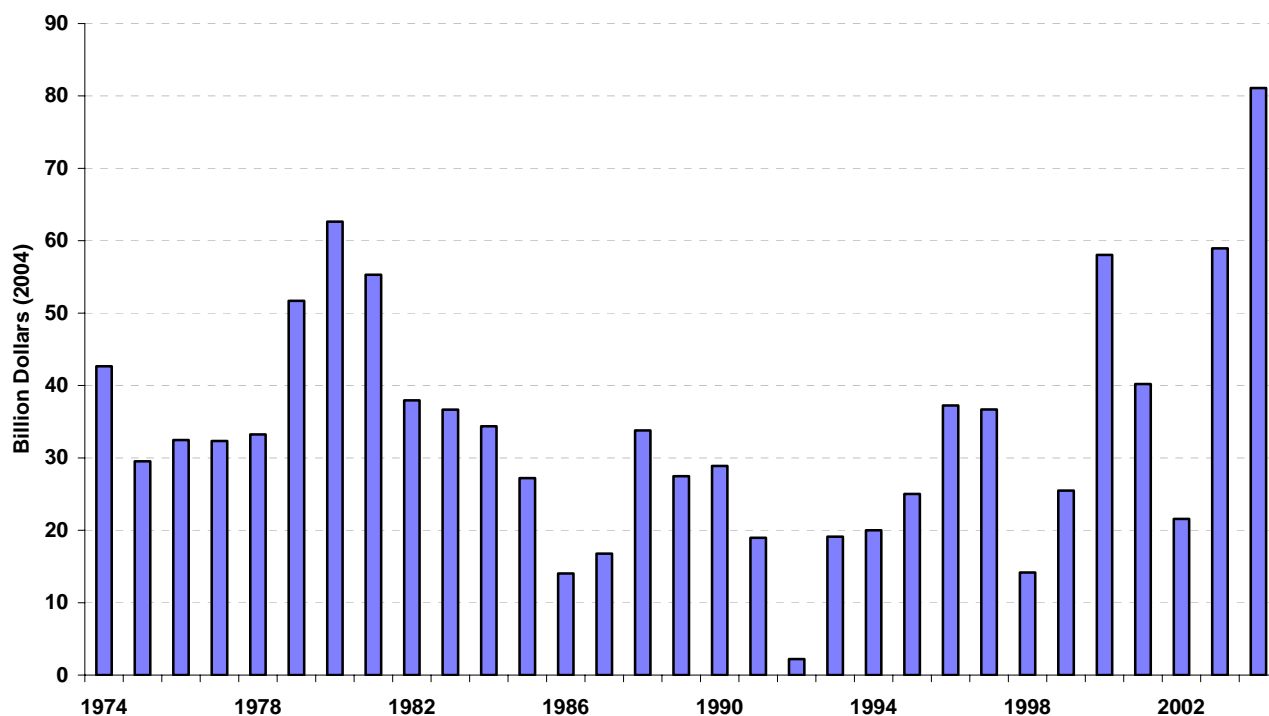
Income Statement Items	FRS Companies			S&P Industrials		
	2003	2004	Percent Change 2003-2004	2003	2004	Percent Change 2003-2004
Operating Revenues	881.2	1127.7	28.0	5,109.7	5,728.9	12.1
Operating Expenses	799.7	1005.3	25.7	4,552.6	5,059.2	11.1
Operating Income (Revenues minus Expenses)	81.6	122.4	50.1	557.1	669.7	20.2
Interest Expense	-8.8	-10.9	24.8	-101.7	-99.7	-1.9
Other Revenue (Expense)	16.9	17.9	6.0	-18.2	-36.3	99.3
Income Tax Expense	-32.3	-48.4	49.7	-144.2	-177.9	23.4
Net Income	57.4	81.1	41.2	293.1	355.8	21.4
Net Income Excluding Unusual Items	57.6	82.8	43.7	NA	NA	

Note: Sum of components may not equal total due to independent rounding. Percent changes were calculated from unrounded data.

NA= not available.

Sources: **FRS Companies:** Energy Information Administration Form EIA-28 (Financial Reporting System); **S&P Industrials:** Compustat PC Plus, a service of Standard and Poor's.

Figure 1. FRS Net Income, 1974-2004



Note: The FRS group of companies has changed incrementally over the years. See endnote 2.

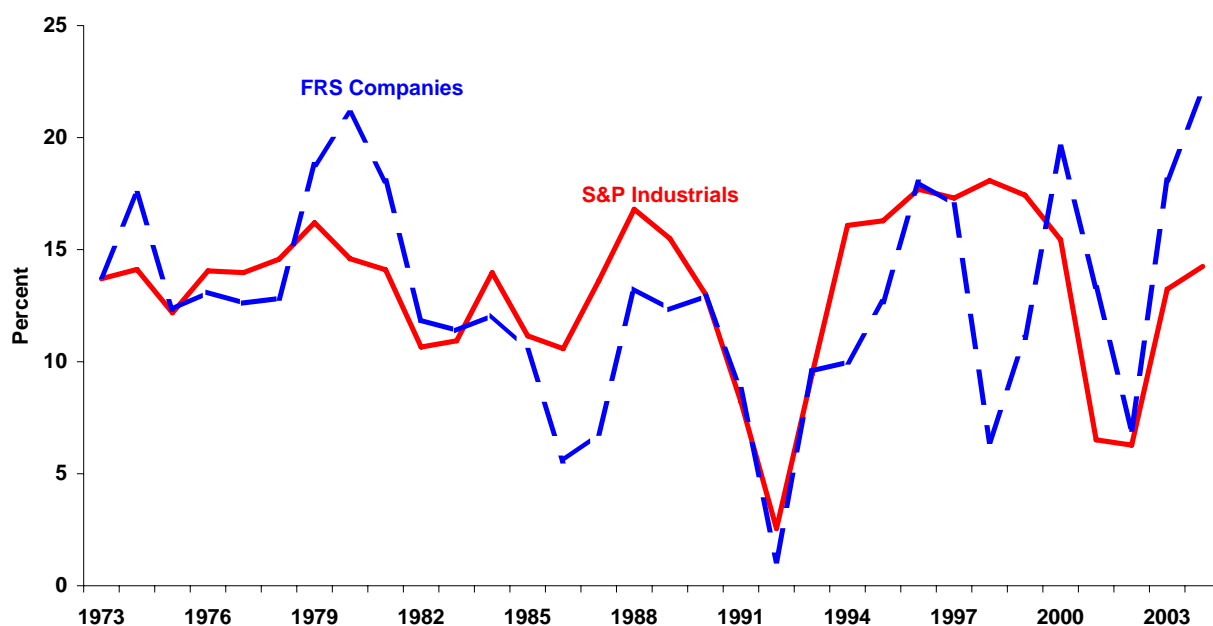
Source: FRS Companies: Energy Information Administration Form EIA-28, (Financial Reporting System).

Profitability—a measure of a company’s or an industry’s net income relative to the equity or capital provided by its investors—rose to 22.1 percent, surpassing the previous peak of 21.1 percent in 1980 (**Figure 2**). The return on stockholders’ equity for the FRS companies has been substantially higher than that of the Standard & Poor’s (S&P) Industrial companies for 4 of the past 5 years (**Figure 3**), a trend not seen since the high-price period of 1979 to 1981.

Among the FRS companies’ lines of business and business segments,⁵ oil and natural gas production continued to be the most profitable, contributing \$59 billion in net income (**Table 2**). Refining/marketing had the largest percentage increase from 2003, providing \$22 billion in earnings. Net income for the nonenergy line of business rose substantially to \$4 billion, the highest net income for this line of business since 1997. Sharply higher earnings in chemical business segments were the primary reason for the increase in nonenergy income. Exxon Mobil reported record earnings for their chemical operations, led by their high-volume commodity chemical portfolio, including olefins, polyethylene, polypropylene, and aromatics.⁶

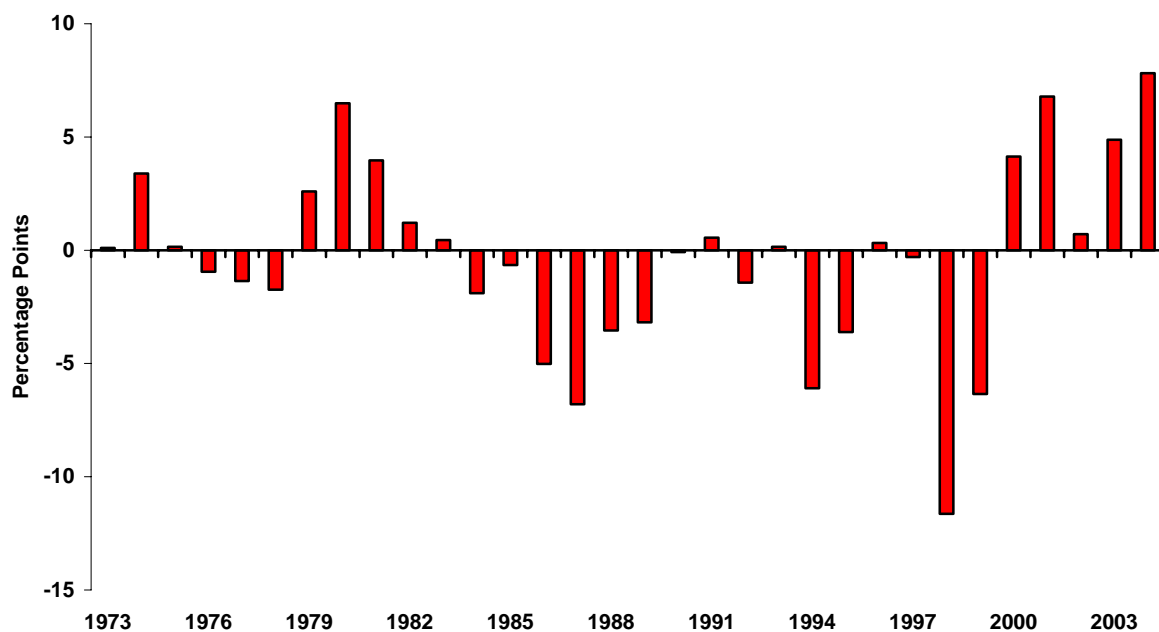
Net income for the oil and natural gas production segment increased 34 percent in 2004. The \$59 billion in earnings was \$13 billion higher (in constant 2004 dollars) than the previous peak in 1981. Natural gas is a growing proportion of FRS company production, having reached 48 percent of production (in barrels of oil equivalent) in both 2003 and 2004. With record high natural gas wellhead prices, natural gas’ contribution to upstream revenues has become increasingly important. Return on net investment in place (ROI)⁷ for the oil and natural gas production segment increased to 18.6 percent, also the highest since

Figure 2. Return on Stockholders' Equity for FRS Companies and the S&P Industrials, 1973-2004



Sources: **FRS Companies:** Energy Information Administration, Form EIA-28 (Financial Reporting System). **S&P Industrials:** Compustat PC Plus, a service of Standard and Poor's.

Figure 3. Difference Between FRS and S&P Return on Stockholders' Equity, 1973-2004



Sources: **FRS Companies:** Energy Information Administration, Form EIA-28 (Financial Reporting System). **S&P Industrials:** Compustat PC Plus, a service of Standard and Poor's.

1981. From 2000 to 2004, the domestic oil and natural gas production segment of the FRS companies provided higher net income and higher ROI than the foreign segment (**Figure 4**).

Table 2. Contributions to Net Income by Line of Business for FRS Companies, 2003-2004
(Million Dollars)

Line of Business	Net Income			Net Income Excluding Unusual Items		
	2003	2004	Percent Change 2003-2004	2003	2004	Percent Change 2003-2004
Petroleum						
U.S. Petroleum						
Oil and Gas Production	22,630	30,361	34.2	23,085	30,265	31.1
Refining/Marketing	7,434	14,796	99.0	7,832	15,351	96.0
Pipelines	827	537	-35.1	838	540	-35.5
Total U.S. Petroleum	30,891	45,694	47.9	31,755	46,157	45.4
Foreign Petroleum						
Oil and Gas Production	21,334	28,589	34.0	21,606	28,113	30.1
Refining/Marketing ^a	2,916	7,310	150.7	3,039	7,298	140.1
Total Foreign Petroleum	24,250	35,902	48.0	24,645	35,414	43.7
Total Petroleum	55,141	81,596	48.0	56,400	81,571	44.6
Downstream Natural Gas	3,603	3,224	-10.5	2,519	3,601	43.0
Electric Power	959	639	-33.4	1,686	1,061	-37.1
Other Energy ^b	115	1,067	827.8	114	1,015	790.4
Nonenergy	934	4,239	353.9	2,198	4,831	119.8
Total Allocated	60,752	90,765	49.4	62,917	92,079	46.3
Nontraceable ^c	-3,325	-9,678	--	-5,268	-9,246	--
Consolidated Net Income ^d	57,427	81,087	41.2	57,649	82,832	43.7

^aInternational Marine is included in Refining/Marketing.

^bThe Other Energy line of business includes coal, nuclear, and non-conventional energy.

^cRevenues and expenses that cannot be directly attributed to a line of business.

^dThe total amount of unusual items was -\$222 million and -\$1745 million in 2003 and 2004, respectively.

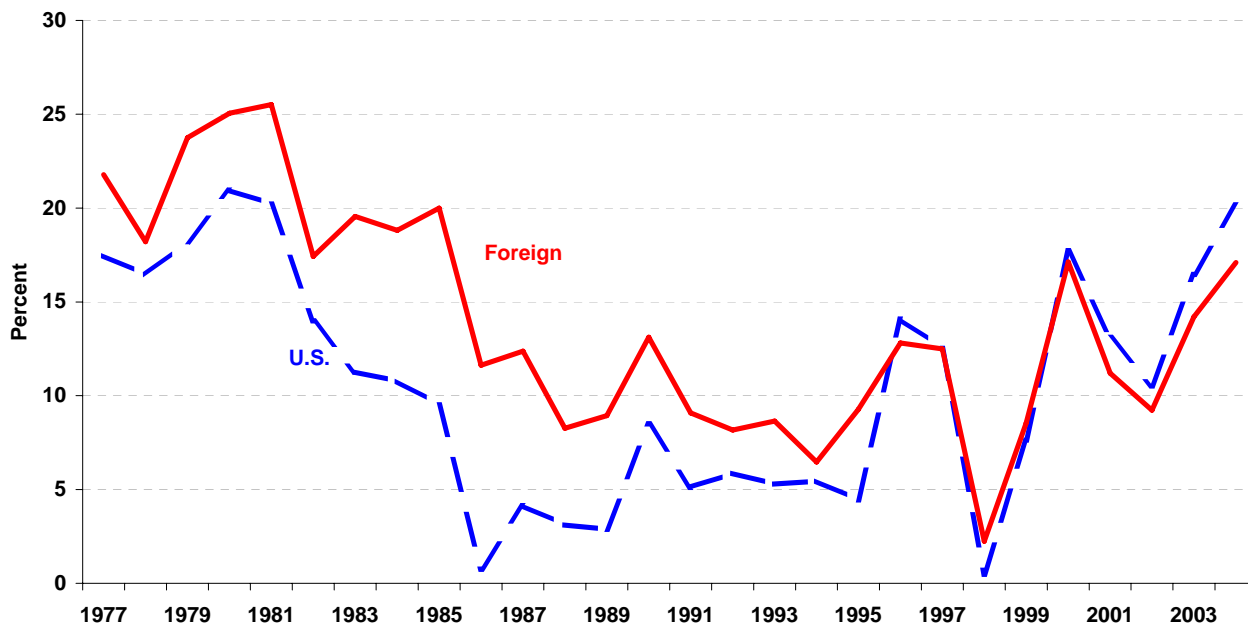
-- = Not meaningful.

NA = Not available.

Source: Energy Information Administration, Form EIA-28 (Financial Reporting System).

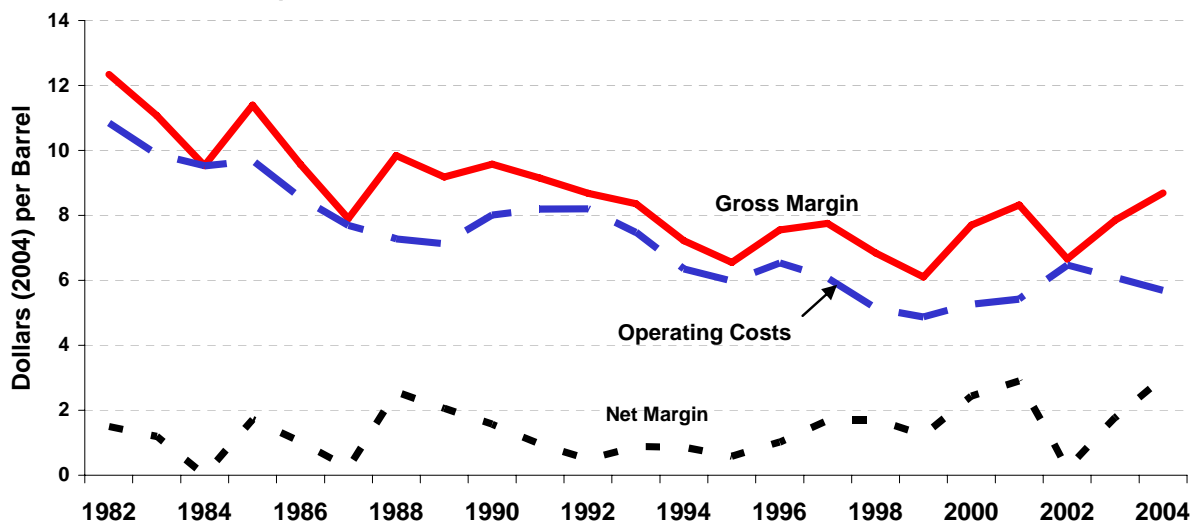
Net income for the FRS companies' refining/marketing segment jumped 113 percent in 2004. Refining/marketing has become a significant contributor to net income as higher demand for petroleum products pushed prices up by more than the increased costs of crude oil. The domestic refining/marketing gross margin⁸ increased to \$8.69 per barrel (21 cents per gallon) in 2004, the highest (in constant 2004 dollars) since 1991 (**Figure 5**). Operating costs declined (on a per-barrel basis), resulting in a net refined product margin of \$2.99 per barrel (7 cents per gallon) in 2004, the highest in the history of the FRS survey. Both domestic and foreign ROI exceeded 18 percent in 2004 (**Figure 6**), yielding an overall refining/marketing ROI of 18.3 percent, which was also the highest in the history of the FRS survey.

Figure 4. Return on Net Investment in Place for U.S. and Foreign Oil and Gas Production, 1977-2004



Source: Energy Information Administration Form EIA-28 (Financial Reporting System).

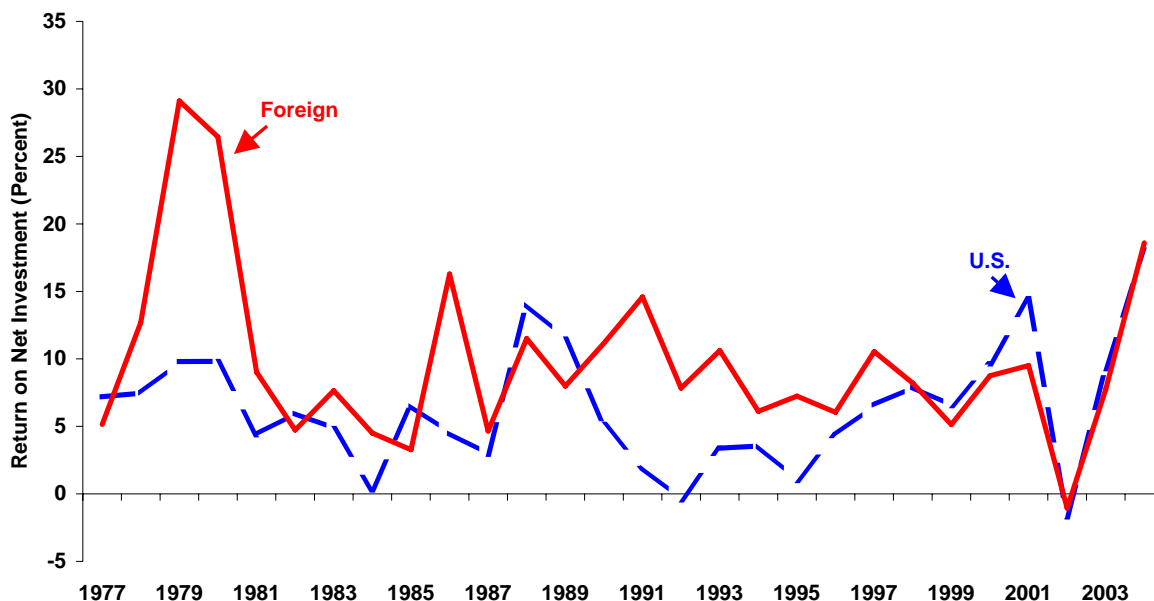
Figure 5. U.S. Refined Product Margins and Costs per Barrel of Petroleum Product Sold for FRS Companies, 1982-2004



Note: The gross margin is refined product revenues less raw material cost and product purchases divided by refined product sales volume.

Source: Energy Information Administration, Form EIA-28 (Financial Reporting System).

Figure 6. Return on Net Investment in Place for U.S. and Foreign Refining and Marketing, 1977-2004



Source: Energy Information Administration Form EIA-28 (Financial Reporting System).

Sources and Uses of Cash

Cash flow from operations⁹ for FRS companies increased in 2004 to \$136 billion (**Table 3**), \$31 billion higher than 2003 and \$41 billion higher than the average amount from 2000 to 2003. The largest increases were in net income; depreciation, depletion, and allowance (DD&A); and other non-cash items (**Table B-11**). Oil and natural gas production contributed more than 70 percent of cash flow from operations (on a pre-tax basis) (**Table 4**).

In addition to funds from operations, FRS companies raised cash through disposals of assets, increasing the amount of cash from this source by 22 percent over 2003. The high-price environment encouraged some companies to sell off non-core assets and to refocus on core areas. Chevron noted that they were able to complete virtually all of their planned asset sales, taking advantage of favorable market conditions to sell non-strategic producing properties.¹⁰ Anadarko announced a refocused strategy in June 2004 that included asset realignment and resulted in over \$3 billion in pre-tax asset sales.¹¹

The largest use of cash was for capital expenditures (measured as additions to investment in place), although the increase was considerably smaller than the increase in cash flow from operations. Capital expenditures increased by \$6.6 billion in 2004 to \$86.5 billion. The next section discusses these expenditures in greater detail.

Dividends to shareholders were the second largest use of cash. In total, FRS companies' dividends to shareholders declined from the 2003 amount. The total, however, was significantly influenced by a large decrease by one respondent. Only three companies reported decreases; all other FRS companies increased dividends in 2004.

FRS companies also used cash to reduce long-term debt, but at a slower pace than in 2003. This use of cash was down 30 percent from 2003. Proceeds from issuing long-term debt also fell 30 percent as higher

Table 3. Sources and Uses of Cash for FRS Companies, 2003-2004
(Billion Dollars)

Sources and Uses of Cash	2003	2004	Absolute Change 2003-2004	Percent Change 2003-2004
Main Sources of Cash				
Cash Flow from Operations	105.1	135.8	30.7	29.2
Proceeds from Long-Term Debt	26.4	18.5	-7.8	-29.7
Proceeds from Disposals of Assets	16.1	19.7	3.6	22.2
Proceeds from Equity Security Offerings	8.4	8.1	-0.3	-3.2
Main Uses of Cash				
Additions to Investment in Place	80.0	86.5	6.6	8.2
Reductions in Long-Term Debt	26.2	18.4	-7.8	-29.8
Dividends to Shareholders	42.8	36.5	-6.3	-14.6
Purchase of Treasury Stock	6.1	14.0	8.0	131.2
Other Investment and Financing Activities, Net	7.9	-5.5	-13.4	-169.5
Net Change in Cash and Cash Equivalents	8.8	21.2	12.4	140.7
Note: Sources minus uses plus other investment and financing activities (net) may not equal net change in cash and cash equivalents due to independent rounding.				
Percent changes were calculated from unrounded data.				
Source: Energy Information Administration, Form EIA-28 (Financial Reporting System).				

cash flow from operations reduced the need for debt financing. Overall, the ratio of long-term debt to stockholders' equity for FRS companies fell in 2004 to 45.3 percent, well below the level of the S&P Industrials (**Figure 7**).

FRS companies significantly increased the cash used to repurchase their own stock. Purchases of treasury stock more than doubled as many companies utilized stock buyback programs to distribute value to shareholders.

The overall uses of cash did not keep up with increases in cash flow, resulting in a substantial increase in cash balances and cash equivalents to \$21.2 billion in 2004 from \$8.8 billion in 2003.

Capital Expenditures

The FRS companies' capital expenditures (measured as Additions to Investment in Place)¹² increased 8 percent to \$86.5 billion in 2004 (**Table 5**). Oil and natural gas production (domestic and foreign combined) comprised 68 percent of the total, while total petroleum accounted for 86 percent of capital expenditures.

Along with capital expenditures, FRS companies report exploration, development, and production (E&P) expenditures for the oil and natural gas production segment. Current expenditures as well as capital expenditures are included in the data, but capital expenditures are predominant. Regional breakdowns are also provided.¹³ Exploration and development expenditures provide insight into the regional targets of upstream investment by FRS companies.

Expenditures for E&P have tended to follow changes in cash flow from operations. The recent surge in cash flow from operations, however, has not resulted in a similar increase in E&P expenditures (**Figure**

Table 4. Line-of-Business Contributions to Pretax Cash Flow, Income Taxes, and Cash Flow for FRS Companies, 2003-2004
(Billion Dollars)

Contribution to Pretax Cash Flow ^a	2003	2004	Absolute Change 2003-2004	Percent Change 2003-2004
Petroleum				
Oil and Gas Production	96.6	124.2	27.6	28.6
Refining, Marketing, and Transport	23.7	37.5	13.8	57.9
Downstream Natural Gas	5.4	5.6	0.1	2.6
Electric Power	2.6	2.2	-0.4	-16.6
Other Energy ^b	0.6	1.2	0.6	90.0
Chemicals	1.6	6.1	4.5	289.2
Other Nonenergy	1.5	-0.4	-1.9	-123.9
Nontraceable	-5.0	-4.7	0.3	--
Total Contribution to Pretax Cash Flow ^a	127.1	171.6	44.5	35.0
Current Income Taxes	-26.3	-44.7	--	69.7
Other (Net)	4.4	9.0	4.6	105.2
Cash Flow from Operations	105.1	135.8	30.7	29.2

^aDefined as the sum of operating income, depreciation, depletion, and amortization, and dry hole expense.

^bThe Other Energy line of business includes coal, nuclear, and non-conventional energy.

-- = Not meaningful.

Note: Sum of components may not equal total due to independent rounding. Percent changes were calculated from unrounded data.

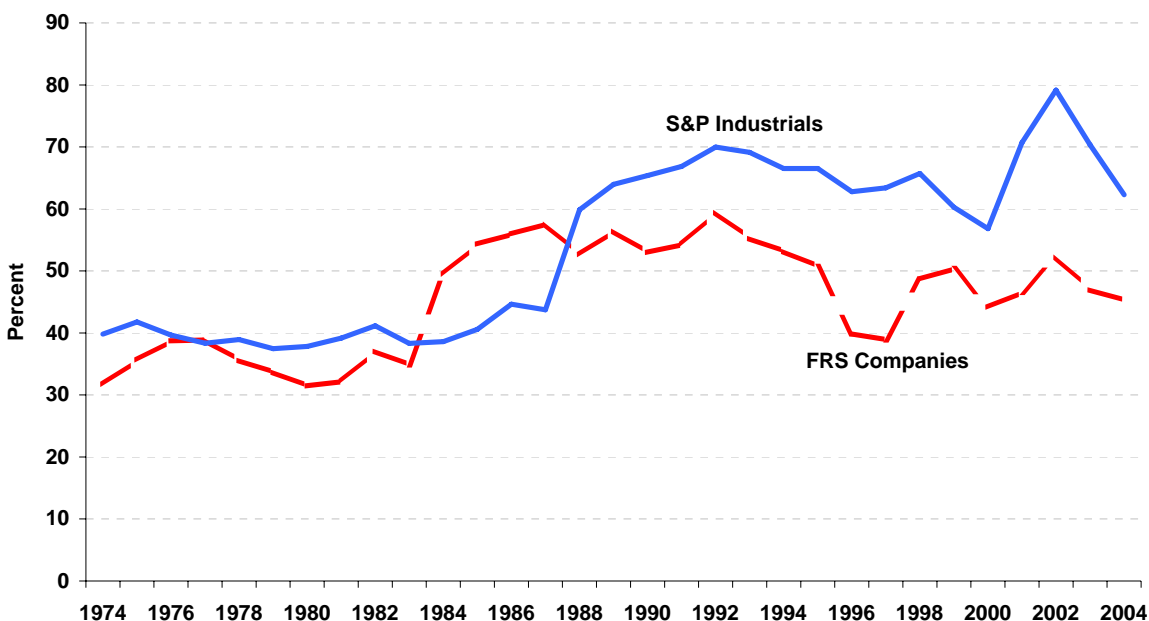
Source: Energy Information Administration, Form EIA-28 (Financial Reporting System).

8). Some of the reasons given that companies have not maintained investments at the same rate as increases in cash flow include limited access to the best prospects, higher tax pressure on oil companies by producing-country governments, shortage of qualified personnel, and strains on the supply of drilling rigs.¹⁴ Furthermore, Total's Chief Executive Thierry Desmarest stated that the company, like most other majors, would not raise its benchmark of \$25 per barrel for assessing the profitability of potential new upstream projects even though much of the industry accepted that prices would likely plateau above \$40 per barrel. Total is taking a conservative approach because of spiraling costs in the oil services industry.¹⁵ Rapidly rising day rates (rates that oil companies pay for drilling rig services), however, also indicate that oil companies have been more willing to increase spending in recent quarters.¹⁶

Total exploration expenditures by FRS companies across all regions increased slightly in 2004 to \$8.4 billion, but remained well below the levels of the early 1980s (**Figure 9**). Development expenditures rose 5.1 percent to \$38.4 billion, the highest level since 1982 (in constant 2004 dollars). Higher prices have encouraged oil and natural gas producers to develop known reserves to increase production, but, as indicated above, many have been hesitant to raise exploration budgets, basing investment decisions on crude oil prices that are far below current levels.

Regionally, despite its maturity as an oil- and natural gas-producing region, the U.S. onshore continues to receive more exploration and development expenditures than any other FRS region. Exploration expenditures increased slightly in 2004 (**Figure 10**), but they were at the fourth lowest level since 1981. The 4 lowest years of exploration expenditures have occurred since 1999. Expenditures for development predominate in the U.S. onshore region: they rose to \$12.1 billion in 2004, nearly twice the level of any other FRS region (**Figure 11**).

Figure 7. Long-Term Debt/Equity Ratio for FRS Companies and the S&P Industrials, 1974-2004



Sources: **FRS Companies:** Energy Information Administration Form EIA-28, (Financial Reporting System).
S&P Industrials: Compustat PC Plus, a service of Standard and Poor's.

EOG Resources continues to expand its presence in the U.S. onshore, noting that it has large potential plays under way in Wyoming, Utah, Texas, and Oklahoma. EOG made significant discoveries in the Barnett Shale trend in 2004 and plans to increase production and further define the play's ultimate size in 2005.¹⁷ Chesapeake Energy Corporation has become the most active driller in the U.S. Mid-Continent, focusing on both finding significant new natural gas reserves and developing existing proved reserves. While natural gas production in the United States has stagnated, Chesapeake has increased production for 14 consecutive quarters. They have acquired rights to 3-D seismic data for 9.9 million acres, and have identified more than 7,000 exploratory and developmental drill sites, representing more than 7 years of future drilling opportunities.¹⁸

From 1992 to 2004, FRS companies put more exploration expenditures into the U.S. offshore region than any other FRS region, although the annual amount declined since 2000. Exploration and development expenditures in the U.S. offshore region declined 7 percent in 2004, which may have been due in part to project delays as a result of Hurricane Ivan. The deepwater Gulf of Mexico is BP's largest area of growth in the United States. BP continued development of Thunder Horse and Atlantis in 2004. Production began from the Holstein field in December 2004 and from the Mad Dog field in January 2005. These four projects are expected to contribute significantly to production growth in the next several years.¹⁹ Chevron views the U.S. Gulf of Mexico as a major exploration area. The company completed a successful well test in 4,100 feet of water and 25,800 feet subsea, the deepest yet in the U.S. Gulf of Mexico. Chevron estimates that their Tahiti field contains 400 to 500 million barrels of oil equivalent that are ultimately recoverable.²⁰ Apache purchased Anadarko's properties (**Table 6**) located on the continental shelf of the U.S. Gulf of Mexico in 2004, making Apache the largest acreage holder on the shelf, and opened up additional drilling prospects for the years ahead.²¹ Anadarko continued to work in the deepwater areas of the U.S. Gulf of Mexico. Their first deepwater project, Marco Polo, started production in July 2004. Development plans for a natural gas processing hub and a natural gas pipeline in the eastern Gulf of

**Table 5. Additions to Investment in Place by Line of Business
for FRS Companies, 2003-2004**
(Billion Dollars)

Lines of Business	2003	2004	Percent Change 2003-2004	Percent Change Excluding Mergers and Acquisitions 2003-2004
Petroleum				
U.S. Petroleum				
Production	25.6	29.0	13.0	11.6
Refining/Marketing				
Refining	6.8	8.1	18.3	12.8
Marketing	2.0	1.3	-33.9	-36.2
Transport	1.2	1.5	28.9	28.9
Total Refining/Marketing	10.0	10.9	9.3	5.2
Pipelines	0.5	2.0	291.1	291.1
Total U.S. Petroleum	36.2	41.9	16.0	14.5
Foreign Petroleum				
Production	26.3	29.8	13.3	27.5
Refining/Marketing ^a	2.8	2.9	6.6	-11.3
Total Foreign Petroleum	29.1	32.7	12.7	23.4
Total Petroleum	65.2	74.7	14.5	18.7
Downstream Natural Gas	6.8	5.5	-19.1	-19.1
Electric Power	2.3	1.4	-40.2	-38.9
Other Energy ^b	0.7	0.8	8.2	8.2
Chemicals	2.9	2.5	-14.1	-26.5
Other Nonenergy	0.7	-0.1	-107.9	-126.9
Nontraceable ^c	1.3	1.8	32.1	32.1
Additions to Investment in Place ^d	80.0	86.5	8.2	10.0
Additions Due to Mergers and Acquisitions	9.8	9.4	-4.8	
Total Additions Excluding Mergers and Acquisitions	70.1	77.2	10.0	

^aInternational Marine is included in Refining/Marketing.

^bThe Other Energy line of business includes coal, nuclear, and non-conventional energy.

^cInvestments that cannot be directly attributed to a line of business.

^dAdditions to investment in place = additions to property, plant, and equipment, plus additions to investments and advances.

-- = Not meaningful.

NA = Not available.

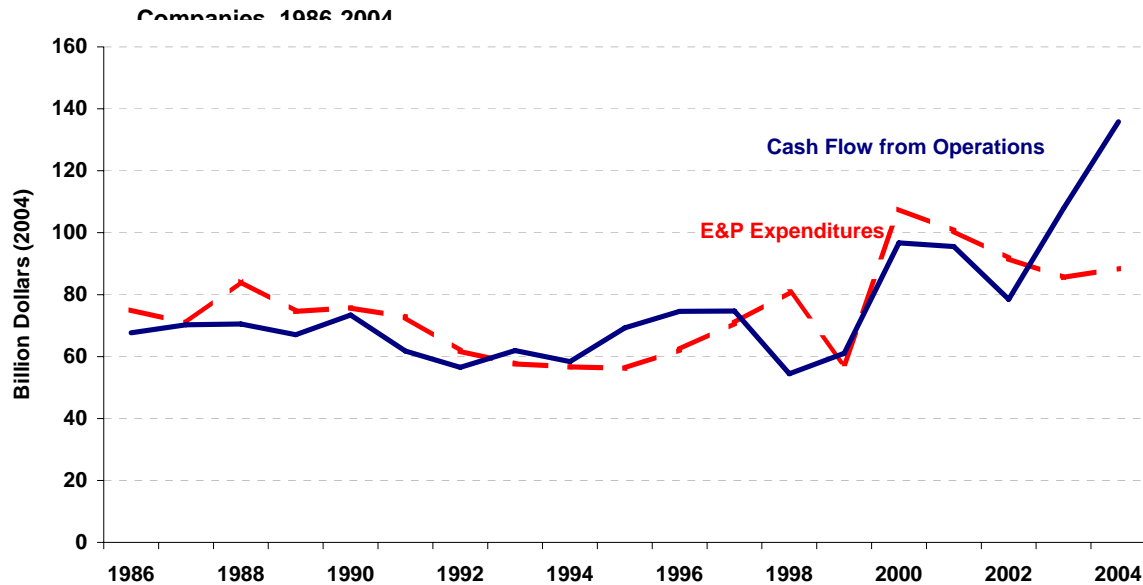
Note: Sum of components may not equal total due to independent rounding. Percent changes were calculated from unrounded data.

Source: Energy Information Administration, Form EIA-28 (Financial Reporting System).

Mexico were approved in late 2004. Also in 2004, Anadarko completed reprocessing seismic and identified potential prospects in deepwater blocks in the western Gulf of Mexico.²²

2004 exploration and development expenditures in foreign FRS regions did not change significantly from 2003. For the past 2 years, FRS companies have put more exploration and development expenditures into Africa than any other foreign region (**Figure 10 and Figure 11**). Exxon Mobil continues to expand exploration and development activities in several countries in Africa, with acreage ranging from onshore to deepwater. Fourteen deepwater exploration wells were completed in West Africa in 2004. Initial

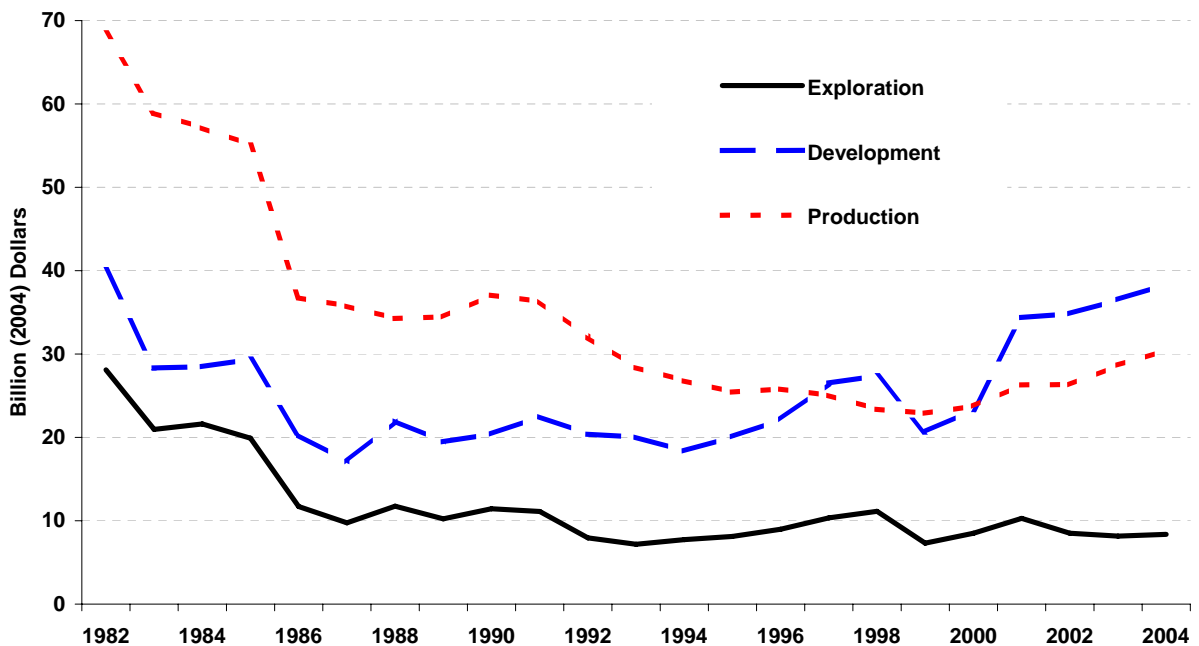
Figure 8. Cash Flow from Operations and Exploration and Production (E&P) Expenditures for FRS



Note: E&P expenditures includes exploration, development, production, unproved acreage, and proved acreage expenditures.

Source: **FRS Companies:** Energy Information Administration Form EIA-28, (Financial Reporting System).

Figure 9. FRS Worldwide Expenditures for Exploration, Development, and Production, 1982-2004

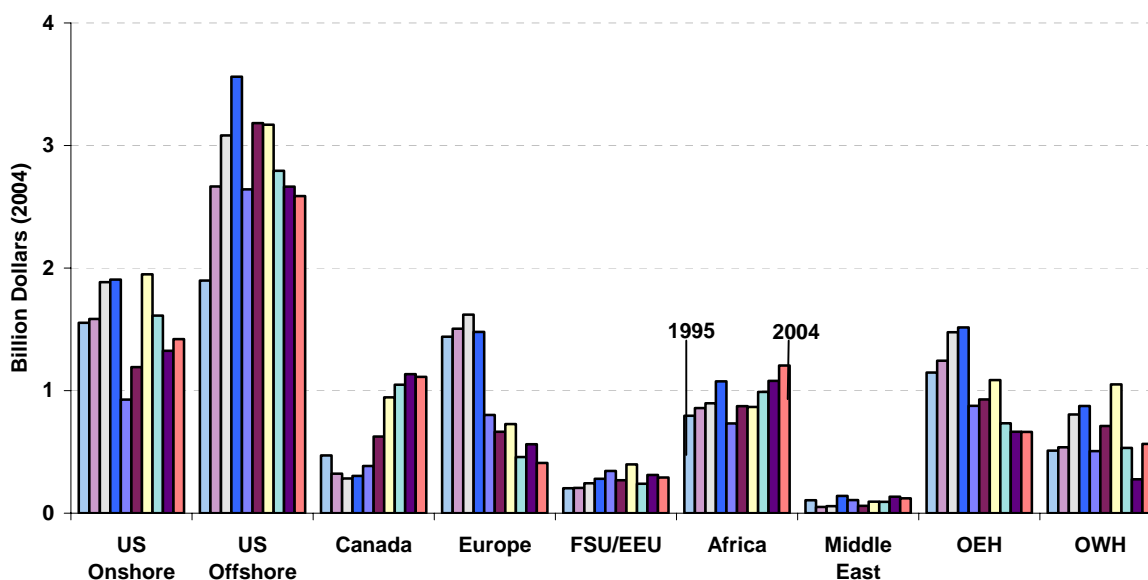


Source: Energy Information Administration Form EIA-28 (Financial Reporting System).

production from the Kizomba A project in Angola began in August 2004.²³ Chevron is the largest producer of crude oil and liquefied petroleum gas in Angola and is embarking on a major development program to significantly increase production after 2005. Chevron also drilled four development wells in the deepwater Agbami project in Nigeria, and is involved in several other exploration and development projects.²⁴

Canada continues to receive considerable interest from FRS companies (**Figure 10 and Figure 11**). Exploration and development expenditures increased from \$1.8 billion in 1998 to \$5.0 billion in 2004. ConocoPhillips is one of the largest oil and natural gas producers in Canada, with conventional oil and natural gas holdings in Alberta, northeastern British Columbia, and southwestern Saskatchewan.

Figure 10. FRS Expenditures for Oil and Natural Gas Exploration by Region, 1995-2004



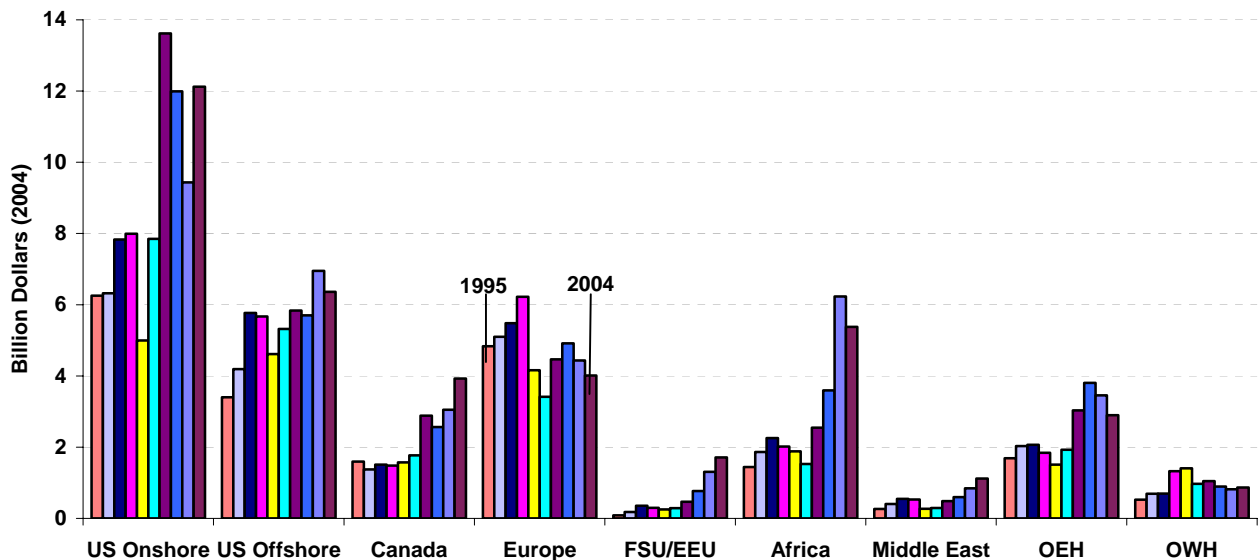
Note: FSU/EEU is former Soviet Union and Eastern Europe. OEH is Other Eastern Hemisphere, which is primarily the Asia-Pacific region. OWH is Other Western Hemisphere, which is primarily Central and South America and the Caribbean.

Source: Energy Information Administration Form EIA-28 (Financial Reporting System).

ConocoPhillips also has exploration acreage in eastern Canada, the foothills of western Alberta, and the MacKenzie Delta/Beaufort Sea area.²⁵ Devon's Canadian production increased 4 percent in 2004 and their reserve additions from drilling and performance revisions were nearly double their production amount. Devon maintains a large exploration portfolio with eight million net undeveloped acres in western Canada.²⁶

Capital expenditures by the FRS companies for refining and marketing increased 9 percent in 2004 from 2003 (**Table 5**). Three refineries were exchanged within the FRS group: Premcor acquired Motiva's Delaware City refinery, Sunoco acquired the Eagle Point refinery from El Paso, and Valero acquired El Paso's Aruba refinery. FRS companies acquiring refining assets cited the increased capability to process heavier (and thus cheaper) crude oil as a driving force in the acquisition. (See the U.S. refining/marketing section in Chapter 3.) Premcor indicated that its ability to process heavier, higher-sulfur crude oil increased to an average of 56 percent of total throughput with the purchase of the Delaware City refinery.²⁷ Valero reported that the purchase of the Aruba refinery, which processes heavy, sour crude oil, contributed approximately \$290 million to their operating income in 2004. They also noted that a coker unit, which was added to their Texas City refinery in December 2003 to process heavier, lower-cost crude

Figure 11. FRS Expenditures for Oil and Natural Gas Development by Region, 1995-2004



Note: FSU/EEU is former Soviet Union and Eastern Europe. OEH is Other Eastern Hemisphere, which is primarily the Asia-Pacific region. OWH is Other Western Hemisphere, which is primarily Central and South America and the Caribbean.
Source: Energy Information Administration Form EIA-28 (Financial Reporting System).

oil, generated nearly \$200 million in operating income in 2004.²⁸ ConocoPhillips reported that crude oil and coker units acquired in 2003 and integrated into the Wood River refinery in the second quarter of 2004 enable the refinery to process heavier, lower-cost crude oil, which has strengthened and improved its economic position.²⁹

FRS companies continued to report substantial spending to produce cleaner fuels with reduced sulfur content, although several companies indicated that these investments were slowing as projects were being completed. Exxon Mobil reported a decline in downstream capital expenditures, reflecting the completion and start-up of several facilities to produce lower-sulfur gasoline and diesel.³⁰ ConocoPhillips stated that a multi-year, \$2 billion clean fuels initiative was well under way, with domestic expenditures more than one-third complete.³¹ Several companies reported capital expenditures made to meet the ultra-low-sulfur diesel fuel requirements that take effect in 2006. Marathon added a 33,000 barrel per day hydrotreater to the Detroit refinery to meet Tier II clean fuel requirements for gasoline and to produce ultra-low-sulfur diesel fuel.³² Premcor reported that capital expenditures to meet low-sulfur diesel standards increased to \$91 million in 2004 from \$4 million in 2003.³³

Reserve Additions

FRS companies' worldwide reserve additions through drilling (i.e., excluding purchases and sales of reserves) fell sharply in 2004, primarily as a result of large negative reserve revisions for oil.³⁴ The reserve replacement ratio (ratio of reserve additions through drilling to production) for oil dropped to 12 percent, the lowest ever reported in the FRS survey (**Figure 12**). In contrast, the 126 percent reserve replacement ratio for natural gas was the highest ever reported in the FRS survey. For oil and natural gas combined, the reserve replacement ratio fell to 66 percent in 2004. Production losses as a result of Hurricane Ivan reduced production of both crude oil and natural gas in 2004. This contributed to the higher reserve replacement ratio for natural gas, but the large negative reserve revisions for oil negated any effects of lower crude oil production.

**Table 6. Value of Mergers, Acquisitions, and Related Transactions
by FRS Companies, 2004**
(Million Dollars)

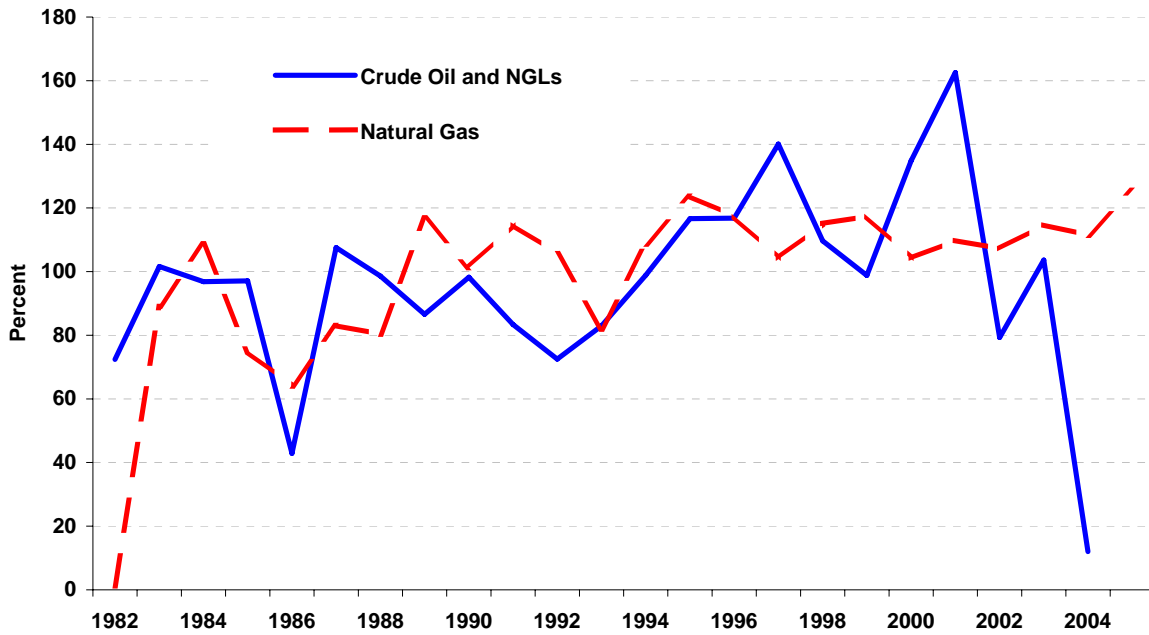
Acquiring Company	Merger or Acquisition	Reported Value of Acquisition
Mergers and Acquisitions between FRS Companies		
XTO	Producing properties from Chevron	930
Premcor	Delaware City refinery from Motiva	800
Apache	Gulf of Mexico properties from Anadarko	525
Valero	Aruba refinery from El Paso	465
Apache	Properties from ExxonMobil	347
XTO	Properties from ExxonMobil	336
Sunoco	Eagle Point refinery from El Paso	249
Sunoco	340 retail outlets from ConocoPhillips	181
Other Acquisitions by FRS Companies		
Kerr McGee	Westport Resources	3,500
ConocoPhillips	Investment in Lukoil	2,723
Chesapeake	Equity interest in Greystone Petroleum LLC	425
Chesapeake	Privately-owned Concho Resources, Inc.	420
Chesapeake	Bravo Natural Resources	335
Motiva	Assets associated with Delaware City refinery	294
Chesapeake	Texas property from Hallwood Energy	292
XTO	Producing properties in Texas and Louisiana	243
XTO	Producing properties in Barnett Shale and Arkoma Basin	223
Chesapeake	Legend Natural Gas	215
ChevronTexaco	Office tower in Houston	129

Sources: Company annual reports to shareholders and press releases.

All three categories of reserve additions—revisions, improved recovery, and extensions and discoveries—declined in 2004 (**Figure 13**),³⁵ but the drop in reserve revisions had the largest impact. For the first time in the FRS survey, companies' negative revisions were larger than their positive revisions. The U.S. Securities and Exchange Commission requires companies to evaluate reserves using prices on the last day of the year; this was noted as one of the primary reasons for the large negative reserve revisions. Prices for heavy crude oil were unusually low at the end of the 2004. Exxon Mobil reported that due to unusually low bitumen prices in Canada on December 31, 2004, proved reserves were reduced by about 500 million barrels of oil equivalent. Prices increased substantially after December 31, which resulted in rebooking of nearly all of these reserves in 2005. Worldwide, Exxon Mobil lowered its proved reserve estimates in 2004 by 800 million barrels because of year-end price revisions.³⁶ The negative reserve revisions had the biggest impact in Canada (**Figure 14**).

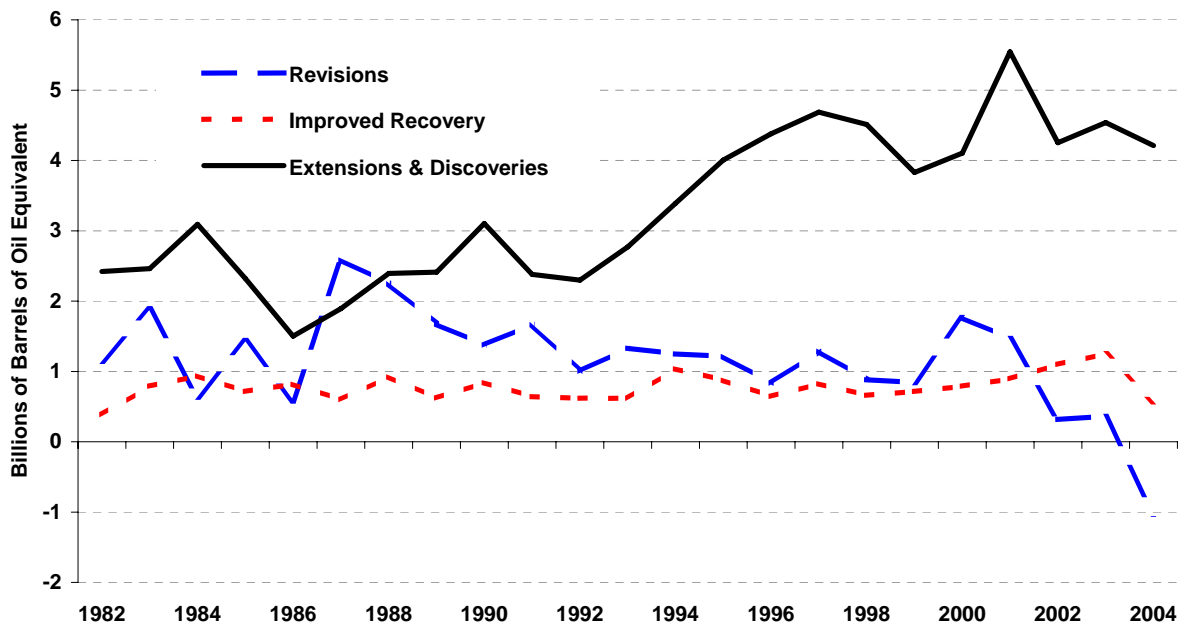
The lower reserve additions reduced oil's end-of-year reserves level (**Figure 15**) to 10.6 years of production at the 2004 rate. The reserves-to-production ratio for natural gas, on the other hand, rose to 12.1 years. Higher natural gas wellhead prices have encouraged exploration and development and kept the natural gas reserves-to-production ratio moving higher, for the most part, since 1997. Oil's reserve-to-production ratio will likely improve as a result of rebooking oil reserves that were affected by the low heavy crude oil prices at the end of 2004.

Figure 12. FRS Reserve Replacement Ratio, 1982-2004



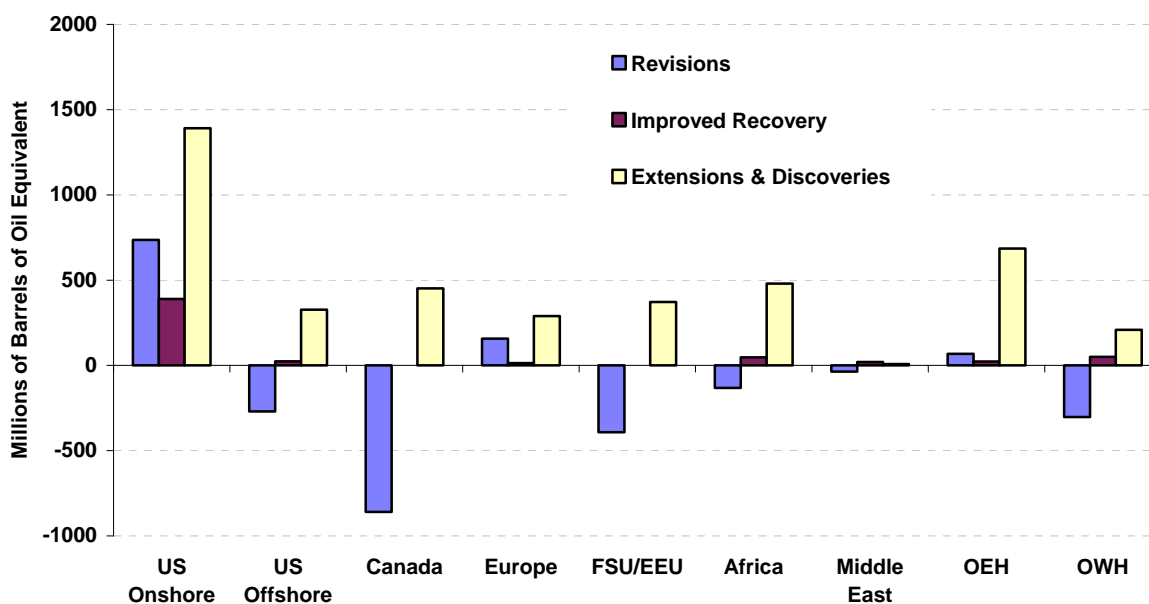
Source: Energy Information Administration, Form EIA-28 (Financial Reporting System).

Figure 13. FRS Reserve Additions by Type, 1982-2004



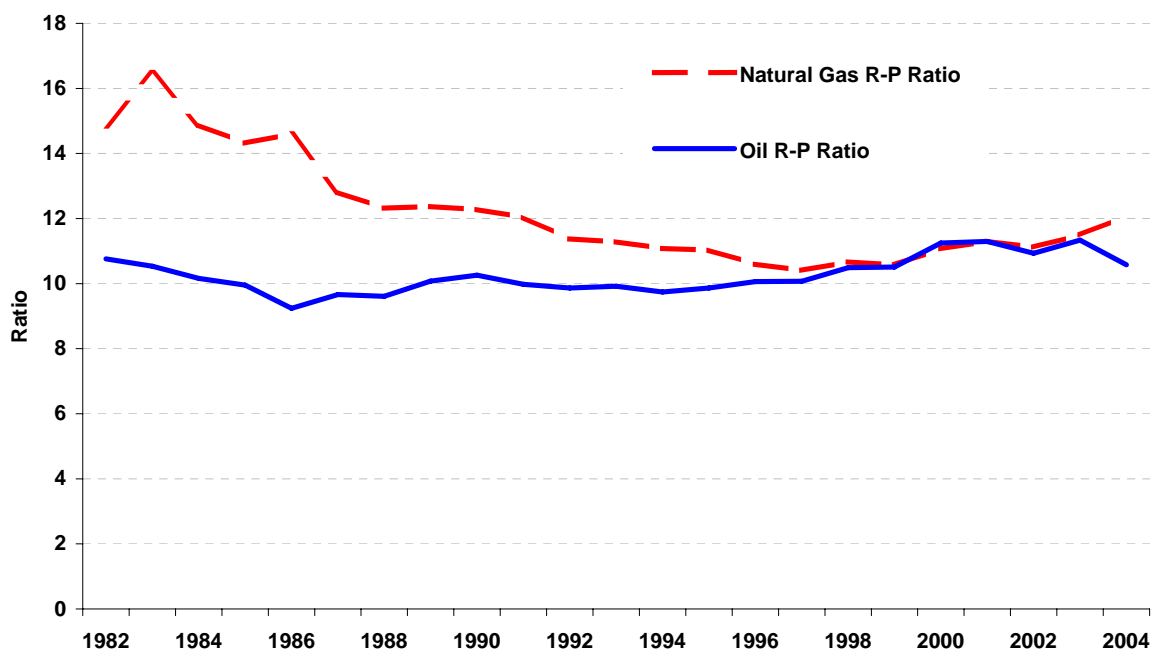
Source: Energy Information Administration Form EIA-28 (Financial Reporting System).

Figure 14. FRS Reserve Additions by Type and by Region, 2004



Note: FSU/EEU is former Soviet Union and Eastern Europe. OEH is Other Eastern Hemisphere, which is primarily the Asia-Pacific region. OWH is Other Western Hemisphere, which is primarily Central and South America and the Caribbean.

Figure 15. FRS Reserve to Production (R-P) Ratio, Oil and Natural Gas, 1982-2004



Source: Energy Information Administration Form EIA-28 (Financial Reporting System).

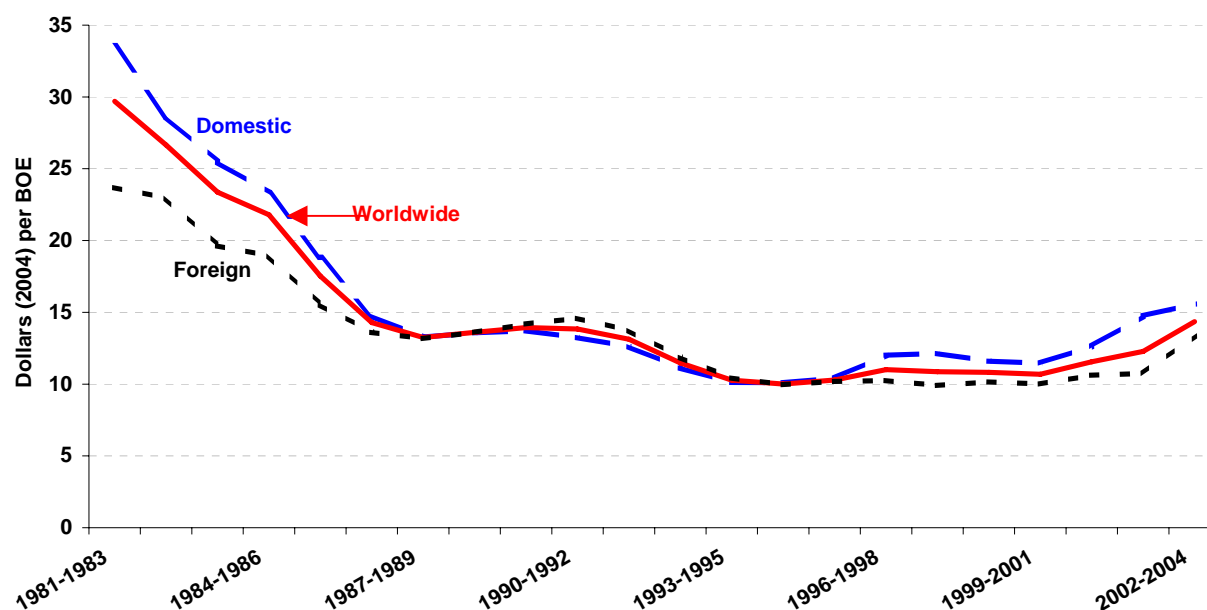
Finding and Production (Lifting) Costs

Average finding costs³⁷ for FRS companies across all regions increased 26 percent in the 2002–2004 period relative to the 2001–2003 period, to \$9.18 per barrel of oil equivalent (boe). The large negative reserve revisions discussed in the previous section resulted in expenditures being spread over fewer barrels of reserves, which contributed to the rise in finding costs. Finding costs were significantly higher in the U.S. offshore and Canada. Reserve additions in both regions declined substantially in 2004 from those of recent years. In contrast to the other regions, finding costs in the U.S. onshore fell 22 percent in the 2002–2004 period relative to the 2001–2003 period, to \$7.18 per boe. The U.S. onshore had the largest increase in reserve additions among the FRS regions (**Figure 14**). See Chapter 3 for a discussion of finding costs.

Production costs (lifting costs)³⁸ increased 11 percent in 2004 to \$5.39 per boe for the FRS average across all regions. Direct lifting costs increased \$0.35 per boe and production taxes increased \$0.16 per boe. Canada was the only FRS region that had a decline in lifting costs. Production taxes rose in every FRS region except OECD Europe. See Chapter 3 for a discussion of lifting costs.

The sum of finding and production costs for FRS companies has increased for both domestic and foreign regions from the low points of the 1990s (**Figure 16**). The average of all regions increased to \$14.35 per boe (constant 2004 dollars) in the 2002–2004 period from its nadir of \$10.00 per boe in the 1994–1996 period.

Figure 16. Domestic, Foreign, and Worldwide Three-Year Finding Plus Production Costs for FRS Companies, 1981–1983 to 2002–2004



Notes: Three-year finding and production costs are the quotient of expenditures and reserve additions for each three-year period. BOE = Barrels of oil equivalent.

Source: Energy Information Administration, Form EIA-28 (Financial Reporting System).

Endnotes

¹ The U.S.-based energy companies that respond to FRS Form EIA-28 are considered to be U.S. majors by the Energy Information Administration (see P.L.95-91, Sec. 205 (h)). More information about the FRS companies can be found in the preface of this report, in Chapter 2, in Appendix A, and at <http://www.eia.doe.gov/emeu/finance/page1a.html>.

² See the Brief Description of Financial Terms for explanation of some of the terms used in the publication.

³ The composition of the FRS group of companies changes over time but the changes are usually incremental. A company is added to the survey when, through growth or acquisition, it meets the criteria classifying it as a major energy company. Typically no more than two companies are added to the survey in any given year. The new companies are usually relatively small compared to the existing FRS group, so the effect on the aggregate totals is marginal. The year 1998 was an exception. Because of a change in the FRS criteria, 11 companies were added to the FRS group. Companies rarely exit unless through merger, in which case the assets of the exiting company are absorbed into the surviving company. Thus, despite occasional year-to-year changes in the FRS group composition, comparisons are still meaningful and informative.

⁴ Unusual items include accounting changes, asset dispositions and write-downs, tax adjustments, etc.

⁵ The FRS collects financial and operating information for the combined corporate entity as well as by lines of business within the company. The lines of business in 2004 consisted of petroleum, downstream natural gas (including natural gas liquids processing and natural gas pipelines), electric power, nonenergy, and other energy (including coal, nuclear, renewable fuels, and nonconventional fuels). The petroleum line of business is further segmented into production, refining/marketing, crude and petroleum product pipelines (for domestic petroleum), and international marine transport (for foreign petroleum).

⁶ Exxon Mobil Corporation, *2004 Summary Annual Report*, pp. 27-28.

⁷ Profitability for the consolidated FRS companies can be measured by return on equity, calculated by net income as a percentage of stockholders' equity. Because stockholders' equity is a corporate concept, the lines of business within the company use ROI as a measure of profitability. ROI is defined as net income divided by net investment in place for that segment. Net investment in place consists of the value of property, plant, and equipment net of depreciation plus investments and advances to unconsolidated affiliates.

⁸ The gross margin is refined product revenues less raw material cost and product purchases divided by refined product sales volume.

⁹ Cash flow from operations consists of net income plus expenses that do not require an outlay of cash minus earnings that do not provide a receipt of cash. For energy companies, the largest non-cash item generally is depreciation, depletion, and amortization (DD&A), which is an allowance for the decline in value of property, plant, and equipment (PP&E), based on accounting principles, recorded as a charge against income.

¹⁰ ChevronTexaco Corporation, *2004 Annual Report*, p. 7.

¹¹ Anadarko Petroleum Corporation, 2004 U.S. Securities and Exchange Commission Form 10-K filing, p. 2.

¹² Additions to Investment in Place are defined as additions to property, plant, and equipment (PP&E) plus additions to investments and advances to unconsolidated affiliates.

¹³ The regions for which separate FRS data are collected include U.S. onshore, U.S. offshore, Canada, Organisation for Economic Co-operation and Development (OECD) Europe, former Soviet Union and Eastern Europe, Africa, Middle East, Other Eastern Hemisphere (primarily Asia Pacific), and Other Western Hemisphere (primarily South America).

¹⁴ "IFP notes rising outlays for services, equipment," *Oil and Gas Journal* (October 14, 2005), p. 44.

¹⁵ "Total's Desmarest Defends Cautious Capital Spending Hurdle," *Oil Daily* (September 22, 2005), p. 5.

¹⁶ "Offshore Drillers Line Up Long-Term Rig Deals," *Oil Daily* (November 23, 2005), p. 5.

¹⁷ EOG Resources, Inc., *2004 Annual Report to Shareholders*, page 11.

¹⁸ Chesapeake Energy Corporation, 2004 U.S. Securities and Exchange Commission Form 10-K filing, pp. 3-5.

¹⁹ BP plc, *Annual Report on Form 20-F 2004*, p. 32.

²⁰ ChevronTexaco Corporation, *2004 Annual Report*, p. 12, 22.

²¹ Apache Corporation, *2004 Summary Annual Report*, p. 6.

²² Anadarko Petroleum Corporation, 2004 U.S. Securities and Exchange Commission Form 10-K filing, p. 8.

²³ Exxon Mobil Corporation, *2004 Financial and Operating Overview*, p. 44.

²⁴ ChevronTexaco Corporation, *2004 Supplement to the Annual Report*, p. 18, 21.

²⁵ ConocoPhillips Company, *Fact Book 2004*, p. 9.

²⁶ Devon Energy Corporation, *2004 Annual Report*, p. 12.

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- ²⁷ Premcor Inc., 2004 U.S. Securities and Exchange Commission Form 10-K filing, p. 4.
- ²⁸ Valero Energy Corporation, 2004 U.S. Securities and Exchange Commission Form 10-K filing, p. 27.
- ²⁹ ConocoPhillips Company, *2004 Annual Report*, p. 15, 48.
- ³⁰ Exxon Mobil Corporation, *2004 Financial and Operating Review*, pp. 65, 69.
- ³¹ ConocoPhillips Company, *2004 Annual Report*, p. 15.
- ³² Marathon Oil Corporation, *2004 Annual Report*, p. 15.
- ³³ Premcor Inc., 2004 U.S. Securities and Exchange Commission Form 10-K filing, p. 54.
- ³⁴ See Chapter 3 for a discussion of FRS companies' reserve additions in the United States. Reserve additions for the United States as a whole are discussed in the Energy Information Administration report *U.S. Crude Oil, Natural Gas, and Natural Gas Liquids Reserves 2004 Annual Report*, available on the Internet at http://www.eia.doe.gov/oil_gas/natural_gas/data_publications/crude_oil_natural_gas_reserves/cr.html.
- ³⁵ Extensions and discoveries are those reserves added by extending the proved area of previously discovered reservoirs or by discovery of new fields or reservoirs. Improved recovery refers to reserves resulting from the application of improved recovery techniques. Reserve revisions are changes (upward or downward) made to previous estimates resulting from new information obtained from development drilling and production history or changes in economic factors.
- ³⁶ Exxon Mobil Corporation, 2004 U.S. Securities and Exchange Commission Form 10-K filing, pp. 82-83.
- ³⁷ Finding costs represent the cost of discovering a barrel of oil equivalent and preparing it for production. In the FRS data, they include exploration and development costs and the cost of acquiring unproved acreage. The costs are averaged over 3-year periods to mitigate the problem of expenditures to find oil and natural gas occurring in a different time period than the recognition of the reserves as proved.
- ³⁸ Production costs, also known as lifting costs, include the costs to operate and maintain producing wells and related equipment and facilities.